MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2022/2023 (TERM 2215)

DBM5624 PRINCIPLE OF FINANCE

(All Sections/Groups)

21 DECEMBER 2022
9.00 AM – 11.00AM
(2 hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 3 pages excluding cover page. The formulae appendices are given.
2. Attempt **ALL** questions. The distribution of the marks for each question is given.

QUESTION 1

Case 01
Rizal is currently evaluating bonds with a maturity of 15 years and a coupon rate of 10 percent. This bond will expect to be paid semiannual coupon payments and has a maturity yield of 9 percent.

Case 02
Razman is looking into a 12-year bond with a 9-percent coupon rate. This bond will pay twice yearly coupon payments and has a yield to maturity of 12 percent.

Both bonds were issued with a RM1,000 face value. Answer the following questions based on the information provided:

a) Calculate the bond price for both cases above. Which one has higher current market value?

(11 marks)

b) Determine whether the bond for both cases is selling at a premium, a discount, or at par, referring the calculation in **(a).**

(4 marks)

c) Explain the implications of your answers in **(b)** for both cases if the yield to maturity is currently valued at 10 percent.

(4 marks)

d) Based on your answer in **(a),** what is the percentage change in the price of both bonds?

(6 marks)

[Total 25 Marks]

QUESTION 2

Anjoo Berhad has paid its most recent dividend payment of RM3 per share; its expected dividend growth is 15 percent over the next year and 20 percent over the next two years. Following that, the dividend will grow at a constant rate of 10 percent per year. The growth rate of 10 percent is expected to continue for some time, and the required rate of return for this stock is 15 percent. As an investor, you should discover more about this company's stock. As a result, you must answer the following questions:

a) Calculate the dividends for the upcoming four years.

(12 marks)

b) What is the total value of the stock at year 3?

(4 marks)

c) Calculate the current price of stock as of today.

(4 marks)

d) If you plan to buy 100 units of company's shares, how much should you pay for it?

(3 marks)

e) What is the value of expected dividend on year 6?

(3 mark)

[Total 25 Marks]

Continued ...

QUESTION 3

The company is looking into multiple projects that will entail a thorough evaluation. These projects are associated with mining exploration. Based on the current economic circumstances, the company estimated a 15 percent discount rate when assessing the projects. The estimated net cash flows (including residual values) for each project are listed below:

YEAR	PROJECT A (RM)	PROJECT B (RM)	PROJECT C (RM)
OUTLAY	-200,000	-200,000	-200,000
1	70,000	75,000	70,000
2	80,000	85,000	80,000
3	90,000	95,000	85,000
4	80,000	65,000	95,000
5	60,000	75,000	90,000

You are required to:

a) Calculate the expected Net Present Value (NPV) for all projects.

(18 marks)

b) In your evaluation, calculate the profitability index (PI) for each project.

(4.5 marks)

c) Based on your calculation in (a) and (b), which project should the company accept?

(2.5 marks)

[Total 25 Marks]

QUESTION 4

SWC Co. has the following capital structure:

	RM	RM
Equity and Reserves		
Ordinary shares, par value RM1	25,000	
Reserves	200,000	
		225,000
Non-Current Liabilities		
6% Preference shares, par value RM1	6,000	
7% Loan notes	10,000	
Bank Loan	5,000	
		21,000
		246,000

The common shares of SWC Co are currently selling at RM3.50 per share, with dividends anticipated to grow by 3% annually in future, and an RM0.50 dividend payment was made recently.

The 6% preference shares are irredeemable and have a market value of RM2.50 per share.

Continued ...

SWC Co's 7% loan notes are currently selling at RM105.45 per loan note and will be redeemed at RM100 per loan note in 5 years. The annual yield until maturity is 5%. SWC Co is subject to corporate taxation at rate of 30%. You are required to calculate:

a) Market value of equity

(2 marks)

b) Market value of preference shares

(2 marks)

c) Market value of loan notes

(2.5 marks)

d) Total market value

(2.5 marks)

e) Cost of equity using Dividend Growth Model.

(2.5 marks)

f) Cost of debt and cost of preference share

(4 marks)

g) Weighted Average Cost of Capital (WACC)

(5.5 marks)

h) What are the **FOUR (4)** disadvantages of using Dividend Growth Model?

(4 marks)

[Total 25 Marks]

End of Paper

Formulae Appendix

I. Finding the value of a bond

Bond value = $C \times [1 - 1/(1 + r)^t]/r + F/(1 + r)^t$

where

C = Coupon paid each period
r = Rate per period
t = Number of periods
F = Bond's face value

II. Finding the yield on a bond

Given a bond value, coupon, time to maturity, and face value, it is possible to find the implicit discount rate, or yield to maturity, by trial and error only. To do this, try different discount rates in the formula above until the calculated bond value equals the given bond value. Remember that increasing the rate *decreases* the bond value.

I. The general case

In general, the price today of a share of stock, P_0, is the present value of all of its future dividends, D_1, D_2, D_3, . . . :

$$P_0 = \frac{D_1}{(1 + R)^1} + \frac{D_2}{(1 + R)^2} + \frac{D_3}{(1 + R)^3} + \cdots$$

where R is the required return.

II. Constant growth case

If the dividend is constant and equal to D, then the price can be written as:

$$P_0 = \frac{D}{R}$$

If the dividend grows at a steady rate, g, then the price can be written as:

$$P_0 = \frac{D_1}{R - g}$$

This result is called the *dividend growth model.*

III. Nonconstant Growth

If the dividend grows steadily after t periods, then the price can be written as:

$$P_0 = \frac{D_1}{(1 + R)^1} + \frac{D_2}{(1 + R)^2} + \cdots + \frac{D_t}{(1 + R)^t} + \frac{P_t}{(1 + R)^t}$$

where

$$P_t = \frac{D_t \times (1 + g)}{(R - g)}$$

IV. Valuation Using Multiples

For stocks that don't pay dividends (or have erratic dividend growth rates), we can value them using the PE ratio and/or the price-sales ratio:

P_t = Benchmark PE ratio × EPS_t
P_t = Benchmark price-sales ratio × Sales per $share_t$

V. The required return, R, can be written as the sum of two things:

$$R = D_1/P_0 + g$$

where D_1/P_0 is the *dividend yield* and g is the *capital gains yield* (which is the same thing as the growth rate in dividends for the steady growth case).

I. Finding Net Present Value (NPV)

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1+R)^t}$$

II. Finding Average Accounting Return

$$AAR = \frac{\text{Average Net Income}}{\text{Average Book Value}}$$

III. Profitability Index

$$PI = \frac{\sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}}{|CF_0|}$$

I. The cost of equity, R_E

A. Dividend growth model approach (from Chapter 7):

$$R_E = D_1/P_0 + g$$

where D_1 is the expected dividend in one period, g is the dividend growth rate, and P_0 is the current stock price.

B. SML approach (from Chapter 11):

$$R_E = R_f + \beta_E \times (R_M - R_f)$$

where R_f is the risk-free rate, R_M is the expected return on the overall market, and β_E is the systematic risk of the equity.

II. The cost of debt, R_D

A. For a firm with publicly held debt, the cost of debt can be measured as the yield to maturity on the outstanding debt. The coupon rate is irrelevant. Yield to maturity is covered in Chapter 6.

B. If the firm has no publicly traded debt, then the cost of debt can be measured as the yield to maturity on similarly rated bonds (bond ratings are discussed in Chapter 6).

III. The weighted average cost of capital, WACC

A. The firm s WACC is the overall required return on the firm as a whole. It is the appropriate discount rate to use for cash flows similar in risk to the overall firm.

B. The WACC is calculated as:

$$\text{WACC} = (E/V) \times R_E + (D/V) \times R_D \times (1 - T_C)$$

where T_C is the corporate tax rate, E is the *market* value of the firm s equity, D is the *market* value of the firm s debt, and $V = E + D$. Note that E/V is the percentage of the firm s financing (in market value terms) that is equity, and D/V is the percentage that is debt.